

## CLAIMS

What is claimed is:

- 1 1. A method of executing a sequence of instructions comprising:
  - 2 determining a predicted predicate value for a predicate;
  - 3 and
  - 4 conditionally executing a predicated instruction depending on the
  - 5 predicted predicate value.
- 1 2. The method of claim 1, further comprising:
  - 2 executing a COMPARE instruction to determine an actual predicate value
  - 3 for the predicate;
  - 4 comparing the actual predicate value to the predicted predicate value; and
  - 5 flushing a pipeline if the predicted predicate value and the actual
  - 6 predicate value are unequal.
- 1 3. The method of claim 2, further comprising executing the predicated
  - 2 instruction after flushing the pipeline.
- 1 4. The method of claim 2, wherein flushing the pipeline consists of flushing only
  - 2 a backend portion of the pipeline.

1 5. The method of claim 2, further comprising updating historical information  
2 using the actual predicate value corresponding to the predicate in a predicate  
3 table.

1 6. The method of claim 1, further comprising storing the predicted predicate  
2 value in a file after determining the predicted predicate value and before  
3 conditionally executing the predicated instruction.

1 7. The method of claim 1, wherein determining the predicted predicate value  
2 includes calculating the predicted predicate value using historical information  
3 corresponding to the predicate.

1 8. The method of claim 6, wherein determining the predicted predicate value  
2 includes reading the historical information corresponding to the predicate in a  
3 predicate table.

1 9. The method of claim 1, wherein conditionally executing the predicated  
2 instruction includes executing the predicated instruction if the predicted  
3 predicate value is true.

1 10. The method of claim 1, wherein conditionally executing the predicated  
2 instruction includes treating the predicated instruction like a no-op if the  
3 predicted predicate value is false.



6                   conditionally execute a predicated instruction depending on the  
7                   predicted predicate value.

1   16.   The processor of claim 15, further comprising a predicate prediction  
2           calculator to calculate the predicted predicate value.

1   17.   The processor of claim 15, further comprising a speculative predicate register  
2           file to store the predicted predicate value.

1   18.   The processor of claim 15, wherein the pipeline includes an actual predicate  
2           value output coupled to the predicate table to provide an actual predicate  
3           value to the predicate table.

1   19.   The processor of claim 18, wherein the pipeline includes a flush input to  
2           receive a flush signal if the predicted predicate value and the actual predicate  
3           value are unequal.

1   20.   The processor of claim 15, wherein the predicate table is to further store  
2           historical information corresponding to a plurality of predicates.